

Patent claims

1. A method for machine-milking of an animal such as a cow, wherein a pulsed vacuum is generated in a pulse chamber of a teat cup (3) by altering the vacuum in the pulse chamber during the pressure changing phases, characterized in that the pressure curve is controlled at least for the duration of one pressure changing phase (a, c) in at least two speed rates.
2. The method according to claim 1 wherein the pressure curve is controlled during the pressure changing phase (a, c) by means of an adjusting unit.
3. The method according to claim 1 or 2 wherein the pressure curve is controlled at least during the ventilation phase (c).
4. The method according to any of the preceding claims wherein the pressure curve is controlled at least during the evacuation phase (a).
5. The method according to any of the preceding claims wherein the speed of pressure changes within a time stage is substantially continuous.
6. The method according to any of the preceding claims wherein the evacuation phase (a) and/or the ventilation phase (c) is/are substantially discontinuous at least within one time stage.
7. The method according to any of the preceding claims wherein the pressure curve is controlled in a first stage and in a subsequent stage of the ventilation phase (c) such that the pressure curve in the first stage is (substantially) flatter than in the subsequent stage.
8. The method according to any of the preceding claims wherein the pressure curve is controlled in a first stage and in a subsequent stage of the evacuation phase (a) such

that the pressure curve in the first stage is (substantially) steeper than in the subsequent stage.

- 5 9. The method according to any of the preceding claims wherein the shifting from the first to the second stage occurs while the pressure in the pulse chamber is in the region of the liner infolding pressure.
- 10 10. The method according to any of the preceding claims wherein the time curve of at least one pressure changing phase (a, c) is adjusted in dependence on a valve characteristic of a valve (9) of the pulsator (1).
11. The method according to any of the preceding claims wherein the free flow resistance is varied toward the teat cup (3).
- 15 12. The method according to any of the preceding claims wherein the valve cross-section of a valve (9) of the pulsator (1) is changed.
13. The method according to the preceding claim wherein the valve cross-section of a valve (9) of the pulsator (1) is changed in multiple stages.
- 20 14. The method according to claim 12 or 13 wherein the valve cross-section of a valve (9) of the pulsator (1) is changed continuously.
15. The method according to any of claims 12 to 14 wherein the pulsator valve is
25 maintained in a floating position in at least one stage of a pressure changing phase.
16. The method according to any of claims 12 to 15 wherein the pulsator valve is maintained in a variable floating position in at least one stage of a pressure changing phase.
- 30 17. The method according to any of the preceding claims wherein the pressure is measured in the pulse chamber which forms an input signal of a component with the

component supplying an output signal through which the pulsator and/or the flow resistor is actuated.

18. A pulsator for a milking means for milking an animal such as a cow for alternatively
5 connecting a vacuum source and a pressure source (5) to a pulse chamber of at least one teat cup (3), wherein a means is provided by means of which at least the pressure time curve can be controlled at least during one pressure changing phase in at least two speed rates.
- 10 19. The pulsator according to claim 18 wherein a control device is provided that is suitable for controlling the pressure curve during the pressure changing phase (a, c).
20. The pulsator according to claim 18 or 19 wherein the device comprises at least one
15 timing element by means of which the duration of one stage of a pressure changing phase (a, c) can be adjusted.
21. The pulsator according to claim 18, 19 or 20 wherein the pressure curve can be controlled at least during the ventilation phase (c).
- 20 22. The pulsator according to any of the claims 18 to 21 wherein the pressure curve can be controlled at least during the evacuation phase (a).
23. The pulsator according to any of the claims 18 to 22 wherein a pulsator valve is
25 provided having a variable opening cross-section.
24. The pulsator according to the preceding claim, characterized in that the opening cross-section is discontinuously variable.
25. The pulsator according to any of the claims 23 or 24, characterized in that the
30 opening cross-section is variable in multiple stages.

26. The pulsator according to any of the claims 19 to 25, characterized in that the device comprises at least one valve (9, 20, 21) and the time curve of the pressure changing phase (a, c) can be adjusted in dependence on a valve characteristic of said valve (9, 20, 21).
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27. The pulsator according to any of the claims 18 to 26, characterized in that the device comprises a pilot valve (20) and a main valve (21).
28. The pulsator according to any of the claims 18 to 27, characterized in that the device
- 10 comprises at least one direct valve.
29. The pulsator according to any of the claims 18 to 28, characterized in that at least one valve comprises at least one valve opening.
- 15 30. The pulsator according to claim 29, characterized in that at least two valve openings are provided.
31. The pulsator according to claim 30, characterized in that said two valve openings have different cross-sections.
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32. The pulsator according to any of the claims 18 to 31, characterized in that the device comprises an element that is a nozzle or a diaphragm.
33. The pulsator according to any of the claims 18 to 32 characterized in that a valve
- 25 closing element is provided that interacts with the at least one valve opening.
34. A milking device comprising at least one teat cup and an associated pulsator according to any of the claims 18 to 34, and a pressure measuring unit for measuring a pressure in the pulse chamber of the teat cup which unit supplies an input signal for
- 30 a device which is used to actuate said pulsator and/or said component.